

## **CLAIMS**

1. A fluid mixer, comprising:  
a chamber having an inlet and an outlet, wherein said inlet is to receive a fluid and  
5 said outlet is to output said fluid; and  
a partition housed in said chamber, wherein said partition includes a plurality of  
perforations to segment said fluid.
2. The fluid mixer as recited in claim 1, further comprising a first conductor  
10 coupled to a first side of said chamber.
3. The fluid mixer as recited in claim 2, further comprising a second  
conductor coupled to a second side of said chamber.
- 15 4. The fluid mixer as recited in claim 3, further comprising an alternating  
current power source coupled to said first conductor and said second conductor, wherein  
said alternating current power source is to generate a capacitance between said first  
conductor and said second conductor.
- 20 5. The fluid mixer as recited in claim 4, wherein said fluid mixer is supported  
by a substrate and wherein said second conductor is coupled to said substrate.
6. The fluid mixer as recited in claim 5, wherein said first conductor is to  
vibrate said fluid.  
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7. The fluid mixer as recited in claim 3, wherein said first conductor is  
parallel to said second conductor.
8. The fluid mixer as recited in claim 4, wherein said partition is coated with  
30 an insulation layer.

9. The fluid mixer as recited in claim 8, wherein said partition is coupled to said alternating current power source to vibrate said partition.

10. The fluid mixer as recited in claim 9, wherein each of said perforations  
5 have a diameter of about ten times a diameter of a molecule in said fluid.

11. The fluid mixer as recited in claim 10, wherein said inlet includes a plurality of openings.

10 12. The fluid mixer as recited in claim 11, wherein said plurality of openings allows said fluid to enter said chamber in a plurality of layered streams.

13. The fluid mixer as recited in claim 2, wherein a flow of said fluid through said inlet and said outlet is perpendicular to a flow of said fluid through said chamber.  
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14. A method of mixing a fluid comprising:  
receiving the fluid in a chamber;  
separating said fluid into a plurality of fluid segments, wherein said separating lowers a diffusion distance of said fluid; and  
20 outputting said fluid from said chamber.

15. The method of mixing as recited in claim 14, wherein said fluid is separated when said fluid flows through a partition having a plurality of perforations.

25 16. The method of mixing as recited in claim 15, further comprising vibrating said fluid, comprising:  
providing a first conductor coupled to said chamber;  
providing a second conductor coupled to said chamber; and  
generating a capacitance between said first conductor and said second conductor.

17. The method of mixing as recited in claim 16, wherein said fluid is vibrated by generating an alternating current in said partition to vibrate said partition.

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18. The method of mixing as recited in claim 17, wherein said fluid is received in layered streams.

19. The method of mixing as recited in claim 17, wherein each of said plurality of perforations is about ten times said diameter of a molecule in said fluid.

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20. A fluid mixer, comprising:

a chamber having an inlet and an outlet, wherein said inlet is to receive a fluid and said outlet is to output said fluid;

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a first conductor coupled to a first side of said chamber;

a second conductor coupled to a second side of said chamber; and

an alternating current power source coupled to said first conductor and said second conductor, wherein said alternating current power source is to generate a capacitance between said first conductor and said second conductor.

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21. The fluid mixer as recited in claim 20, further comprising a partition housed in said chamber, wherein said partition includes a plurality of perforations to segment said fluid.

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22. The fluid mixer as recited in claim 21, wherein said fluid mixer is supported by a substrate and wherein said second conductor is coupled to said substrate.

23. The fluid mixer as recited in claim 22, wherein said first conductor is to vibrate said fluid.

24. The fluid mixer as recited in claim 23, wherein said first conductor is parallel to said partition.

25. The fluid mixer as recited in claim 21, wherein said fluid mixer is supported by a housing and wherein said first conductor and said second conductor are coupled to the housing.

26. The fluid mixer as recited in claim 25, wherein said alternating power source is coupled to said partition to vibrate said partition.

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